Snowmobile-Caribou Surveys Within The Quesnel Highlands, Cariboo Region, 2004

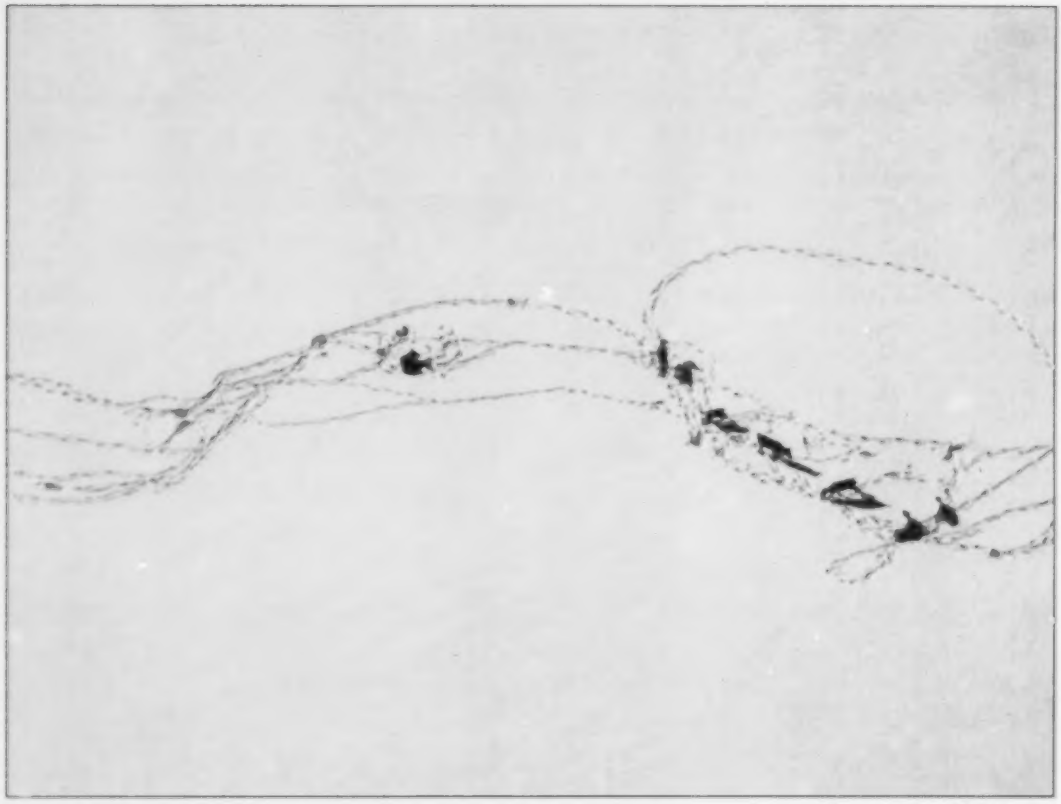

Photo: Geoff Price

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105-01391/

Summary

Mountain Caribou have been identified as threatened by COSEWIC and as red-listed (endangered) in British Columbia and have been the centre of conservation concern for a number of years. There are concerns about the potential impact of backcountry activities on caribou winter range. Backcountry recreation activities, snowmobiling and heli-skiing in particular, are considered to be a major conservation concern due to the potential for displacement of caribou from their winter habitat.

To address this issue, a voluntary two year agreement was entered into with the local snowmobile clubs from Quesnel, 100 Mile House and Williams Lake, the Ministry of Sustainable Resource Management and the Ministry of Water, Land and Air Protection.

This report documents the survey results from Year 2 of the voluntary management agreement. Fixed-wing flights undertaken from between January 10, 2004 and April 24, 2004. Data collected from three caribou telemetry flights has also been included. The survey results show that a total of 18 snowmobiles (8 snowmobiles were seen in an area under review) were sighted in closure zones during this period with 65 snowmobiles seen in caution zones. Snowmobile tracks were also seen in closure zones but no snowmobiles were seen indicating that there was use but the number of machines was unknown.

Introduction

The Ministries of Water, Land and Air Protection (MWLAP) and Sustainable Resource Management (MSRM) and the Quesnel Highlands Management Society (QHMS) have entered into a two year "voluntary agreement" to address potential impacts to caribou and caribou habitat by snowmobiles in the mountain caribou range in the Cariboo Region. A monitoring plan was included in this "agreement" to collect baseline data on snowmobile use in the *Voluntary Closure Zones* and *Caution Zones* as identified and mapped by the MSRM. *Voluntary closure zones* are areas of critical caribou habitat. These areas were to receive no snowmobile activity. *Caution zones* are areas of critical caribou habitat that had not been closed to snowmobiling activity. However, in these areas, if caribou or caribou tracks were seen snowmobilers were to avoid direct and indirect disturbance to caribou.

Snowmobile surveys from a fixed-wing aircraft were conducted on a regular basis throughout the 2004 winter season from January 2004 until the end of April 2004. As part of the agreement a representative of the QHMS was to be invited on six of the monitoring flights. A representative had attended three flights by the end of the project.

The two year project was funded through the Habitat Conservation Trust Fund program.

Project Area

The monitoring project study area covers the Wells Gray North and the Barkerville sub-populations of Mountain Caribou from Spanish Creek in the south to Two Sisters Mountain in the north. The study area is exclusive of Wells Gray and Bowron Lakes parks and covers the eastern portions of the 100 Mile, Central Cariboo and Quesnel Forest Districts. The survey areas are consistent with areas identified by the Ministry of Water, Land and Air Protection as critical caribou winter habitat. The monitoring project study area was divided into four zones (see Figure 1): Zone A covered the area from Spanish Creek north to the East Arm of Quesnel Lake; Zone B covered the Junction area between the East Arm and North Arm of Quesnel Lake including Blue Lead Creek; Zone C covered the area from the North Arm of Quesnel Lake to the Cariboo River; Zone D covered the area from Cariboo Lake north to Two Sisters Mountain.

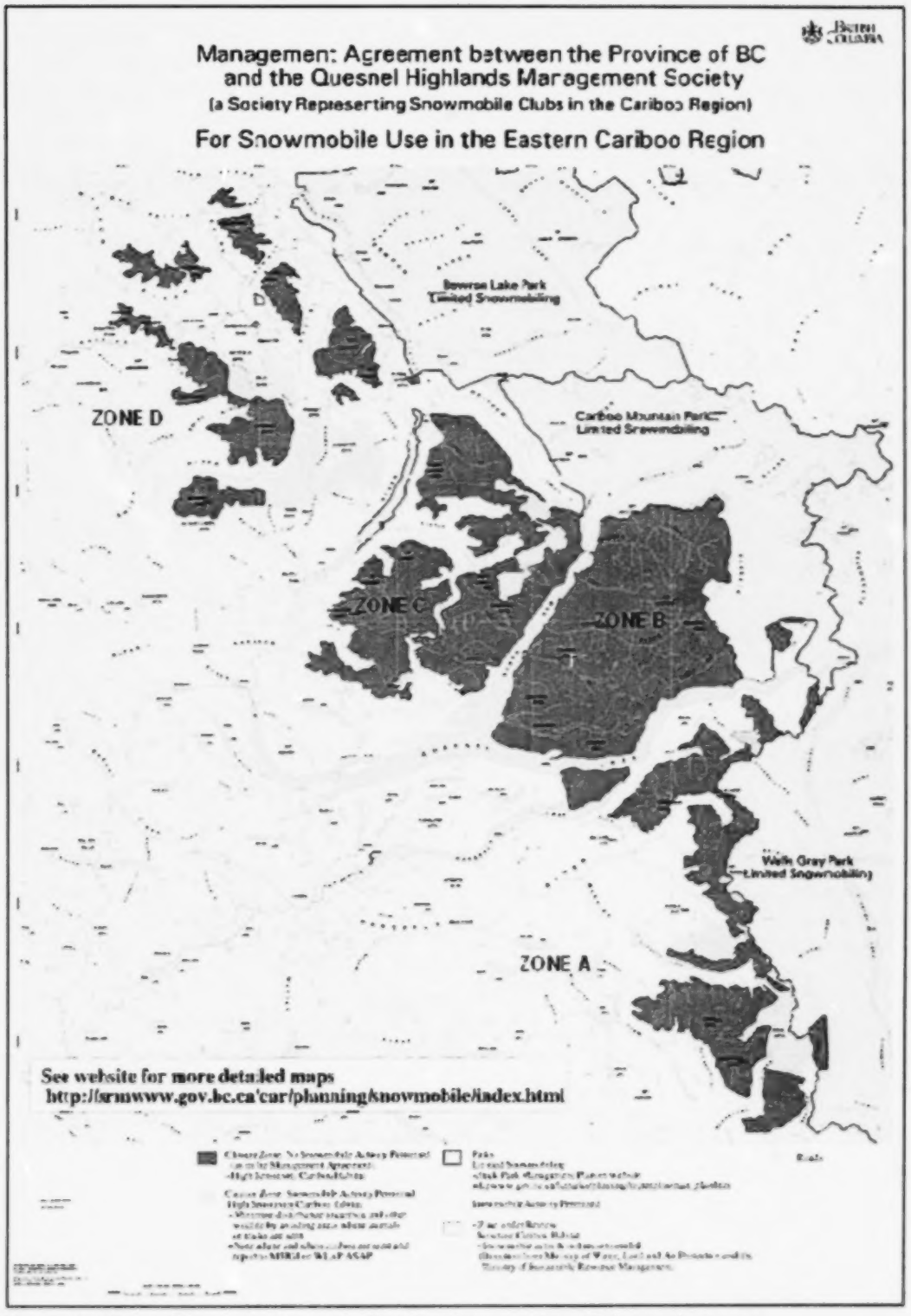

Figure 1: Map of the project area indicating the zonation of the project area.

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Methodology

Initially, in Year 1, the monitoring flights were done on weekdays. However, it was discovered that there were few snowmobiles present on weekdays. Therefore, the monitoring flights were shifted to weekends to take advantage of the peak snowmobile use periods. Usually two zones were flown per day for example, Zones A and B were flown on a Saturday and Zone C and D the following day, weather permitting. All flights originated from the Williams Lake Airport.

The flights were done using either a Cessna 182 or Cessna 206 fixed wing aircraft depending on availability. These aircraft came equipped with a Garman 95 Global Positioning Satellite (GPS) unit with a fixed antenna. These units were used rather than a handheld unit as the fixed units are more accurate and consistent for this application. The data was recorded on a Snowmobile Monitoring Data Collection Form (attached).

In order to maintain consistency each zone was flown in the same direction each flight, weather permitting. For example, Zones A, C and D were flown in a counter clockwise direction while Zone B was flown in a clockwise direction starting at Blue Lead Creek. In order not to bias the results the complete zone was surveyed rather than just flying directly to the known areas of snowmobile use. This also afforded the opportunity to spot and record any caribou to supplement the telemetry relocation flights and to add to WLAP's caribou location database.

As snowmobiles or snowmobile tracks were sighted the GPS co-ordinates were recorded along with the geographic location, the number of snowmobiles, amount of usage and any relationship to caribou. One of the objectives was to identify **caribou and snowmobile use** either through visual sightings or the identification of tracks within the project area. The visual sightings of either caribou or snowmobiles were not crucial to the project other than to confirm numbers. In some instances caribou were consistently noted in certain areas i.e. Welcome Mountain. Where this occurred the animals were counted once to avoid duplication and inflating the final totals.

In instances where the snowmobile tracks had covered a large area, and no snowmobiles were evident, GPS co-ordinates were taken at the "corners" of the use area(s). In addition, any caribou sightings and/or tracks were also recorded identifying the GPS co-ordinates, the number of animals seen or the tracks or beds seen and the relationship to snowmobiles if any. These data points were then plotted on a map of the project area (see Figure 2). In addition to the snowmobile monitoring flights Ministry of Water, Land and Air Protection staff and contractors were requested to record snowmobile data in the course of their projects i.e. caribou or wolf telemetry flights.

Results

A total of 18 (20%) snowmobiles were observed in *voluntary closure zones* with 65 (71%) snowmobiles observed in *caution zones* with 8 snowmobiles were seen in areas under review over the course of 25 flights within the project area. The observed numbers are expected to be lower than actual because the flights were conducted only on weekends and that weather conditions played a significant role in whether a zone could be surveyed. A total of 90 caribou were counted on the project flights with a further 34 animals estimated, based on tracks or beds, to have been in the project areas. 64% of observed caribou were in *closure zones*, while 36% were in *caution zones*. Detailed daily spreadsheets are attached including some data from the telemetry flights.

TABLE 1: SUMMARY OF OBSERVED SNOWMOBILE AND CARIBOU ACTIVITY BY CLOSURE AND CAUTION ZONE FOR THE QUESNEL HIGHLANDS SURVEY AREA, 2004

ZONE*	CAUTION/ CLOSURE ZONE*	NO. OF SNOWMOBILES	SNOWMOBILE TRACKS Y/N	NO. OF CARIBOU	CARIBOU TRACKS Y/N
A	Closure	3	Y	15	Y
	Caution	49	Y	21	Y
B	Closure	0	Y	4	Y
	Caution	No activity	N	0	Y
C	Closure	15	Y	24	Y
	Caution	9	Y	11	Y
D	Closure	0	Y	15	Y
	Caution	7	Y	0	Y
All	Under Review	8	Y	Unknown	N

*Refer to the Methodology Section for an explanation of the zones.

TABLE 2: SUMMARY OF OBSERVED SNOWMOBILE AND CARIBOU ACTIVITY BY CLOSURE AND CAUTION ZONE AND MONTH FOR THE QUESNEL HIGHLANDS SURVEY AREA, 2004

	January	February	March	April	Totals	%
No. of Flights	5	6	10	4	25	
Snowmobiles In Closure Zones	0	7	8	3	18	.20
Snowmobiles In Caution Zones	7	17	41	0 Tracks Only	65	.71
Snowmobiles In Review Zones	0	0 Tracks Only	8	0 Tracks Only	8	.09
Caribou In Closure Zones	10	24	19	5	58	.64
Caribou In Caution Zones	0	9	22	1	32	.36

Discussion

Data collected from January 10, 2004 to April 24, 2004 indicated that, for the most part, the agreement was being adhered to and snowmobilers were respecting the *voluntary closure zones* as 80% of the observed snowmobiles were in caution zones or zones under review. However, there were some exceptions.

Snowmobile use was noted on the west side of Grain Creek east of Badger Peak (see Photos 4, 5& 7), the area west of Cameron Ridge in the Welcome Mountain area (see Photo 9) and the Bill Miner Creek area. These areas have been identified as *voluntary closure zones* by agreement (except Bill Miner Creek which is under review).

A herd of twenty caribou were seen in the Mica Mountain area for approximately one week (see Photo 1). The group was seen on March 28 and up to that point there had been no snowmobile activity in the area from the monitoring flights. One week later, on April 4, snowmobile activity (tracks only) was noted (see Photo 2). The group had apparently split up into two smaller groups and had left the area. One group appears to have headed in a westerly direction (see Photo 3) and the other group headed east. A temporary closure was discussed but did not proceed as the caribou left the area.

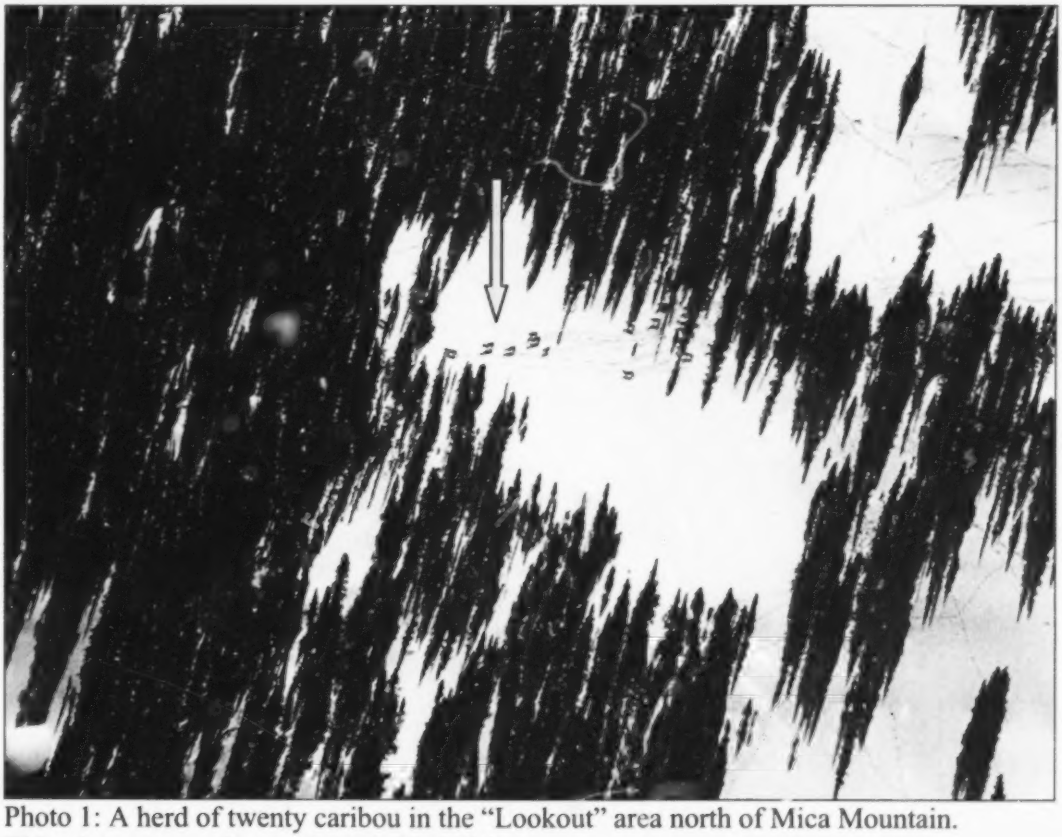

Photo 1: A herd of twenty caribou in the "Lookout" area north of Mica Mountain. This picture was taken on March 28, 2004.

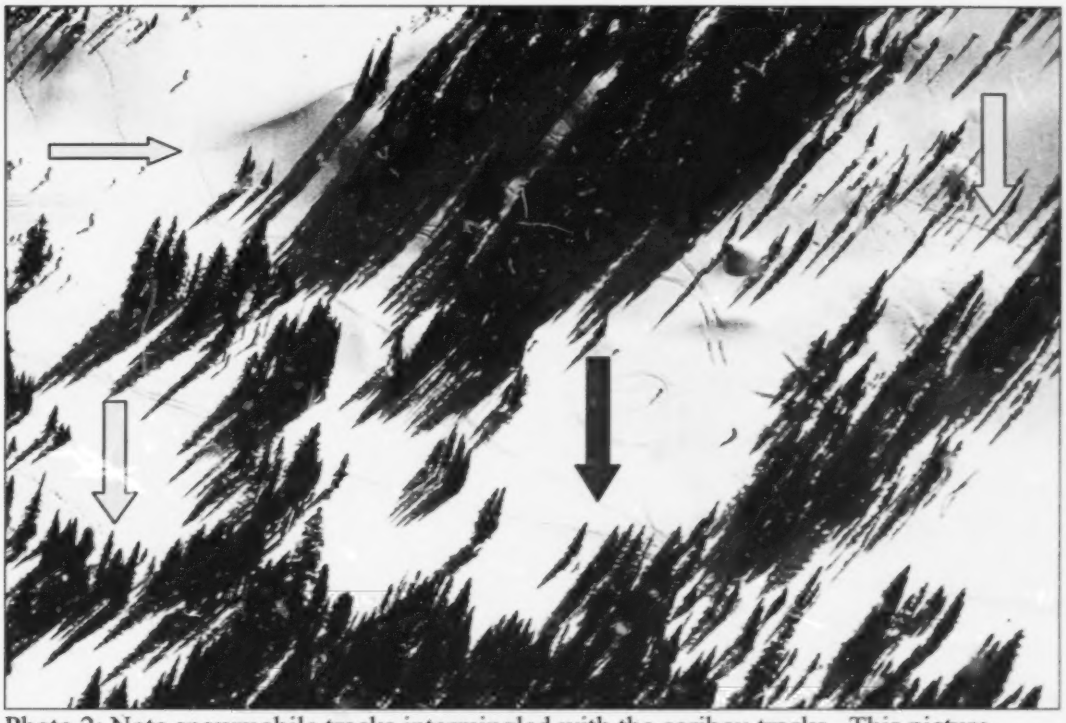

Photo 2: Note snowmobile tracks intermingled with the caribou tracks. This picture was taken on April 4, 2004 in the "Lookout" area north of Mica Mountain one week after the caribou were first seen.

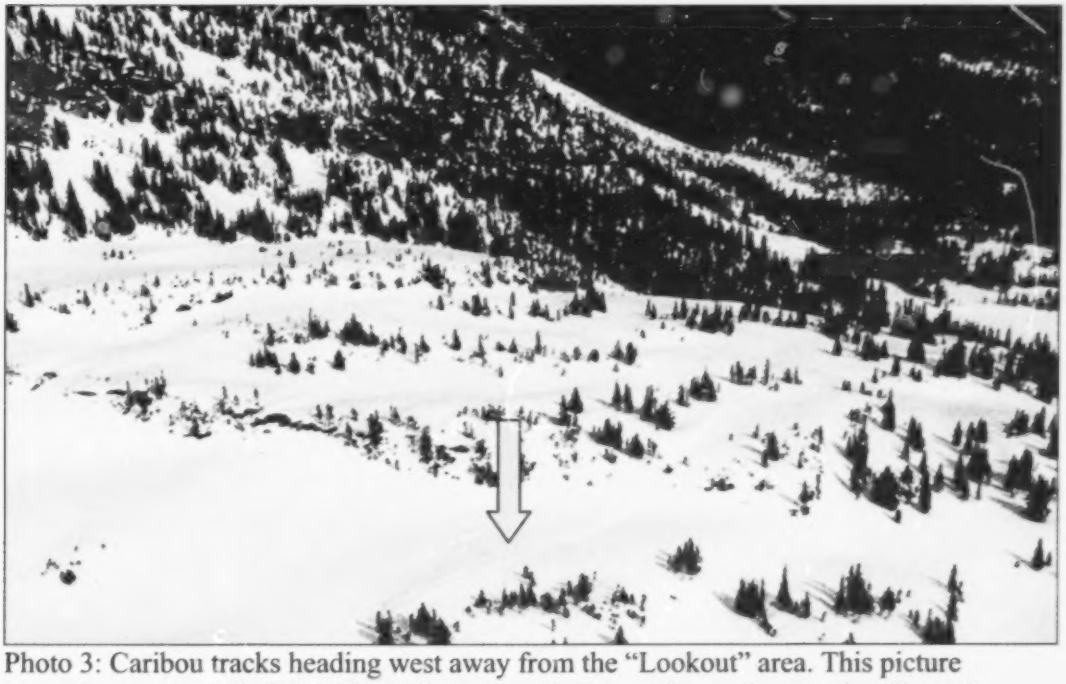

Photo 3: Caribou tracks heading west away from the "Lookout" area. This picture was taken on April 4, 2004. The yellow arrow indicates the caribou tracks. The red arrow indicates the "Lookout" snowmobile area.

Another area of concern was the Grain Creek area in the vicinity of the caribou timber harvesting trials and in the Badger Peak area west of Grain Creek. On two occasions snowmobiles were seen in the Badger Peak area on February 21 and March 14, 2004 (see Photos 5 and 6). Also on February 21 a group of twelve caribou were seen in close proximity to the snowmobiles. On the February 22 flight caribou tracks (attributed to the twelve caribou seen on the 21st.) were seen in the adjacent drainage to the north (see Photo 8).

Photo 4: The red arrows indicate a part of the area east of Badger Peak used by the snowmobiles identified in Photo 5. Picture was taken on February 22, 2004.

Snowmobilers had used the trial area to access the caution zone east of the trials in between Grain Creek and Ishkloo Creek. There had been significant caribou activity in this area at the same time (see Photo 10). In addition, on a field trip to place No Snowmobiling signs at the trial location older caribou tracks were seen. It appears that a group of three to four animals had moved from the west side of Grain Creek and had used the trial area prior to moving east towards Long Creek. These tracks were not observed during the monitoring flights and are not shown in the data sheets.

Photo 5: Red arrow indicates 4 of 7 snowmobiles in the area of Badger Peak which is a voluntary closure area. This picture was taken on February 21, 2004.

Photo 6: Three snowmobiles in the Grain Creek area in a voluntary closure zone. Picture was taken on March 14, 2004.

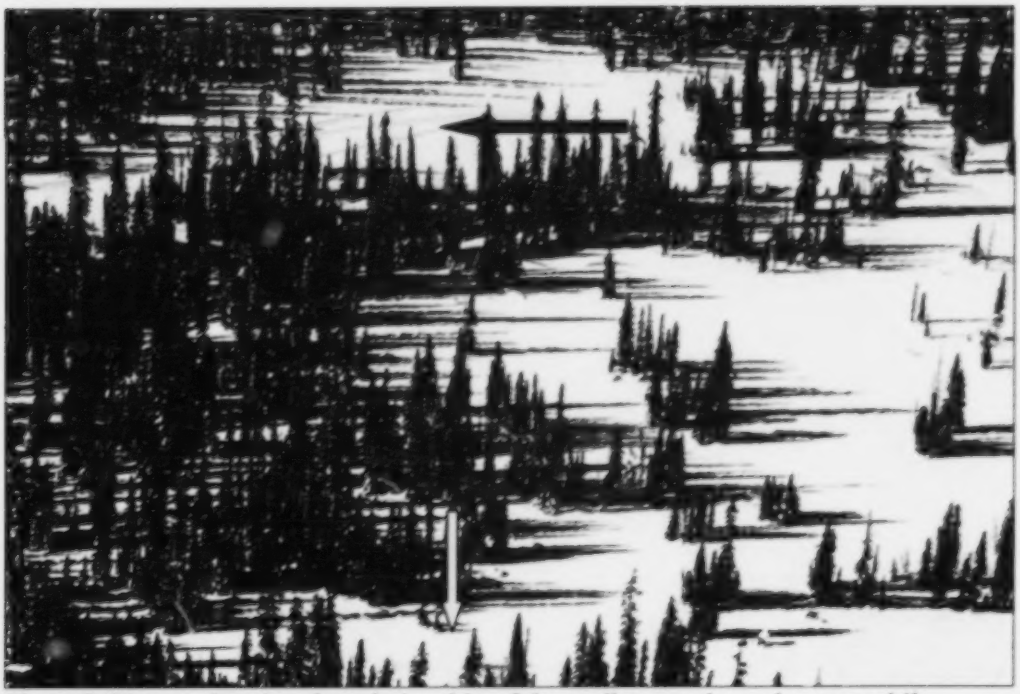

Photo 7: Picture showing the relationship of the caribou tracks and snowmobile tracks in the Grain Creek area. The red arrow indicates snowmobile tracks and the yellow arrow indicates caribou tracks. Picture was taken on February 21, 2004.

Photo 8: Picture of caribou tracks in the Grain Creek area northeast of Badger Peak. It appeared that the caribou moved north into an adjacent drainage from where the snowmobiles were seen. Picture was taken on February 22, 2004.

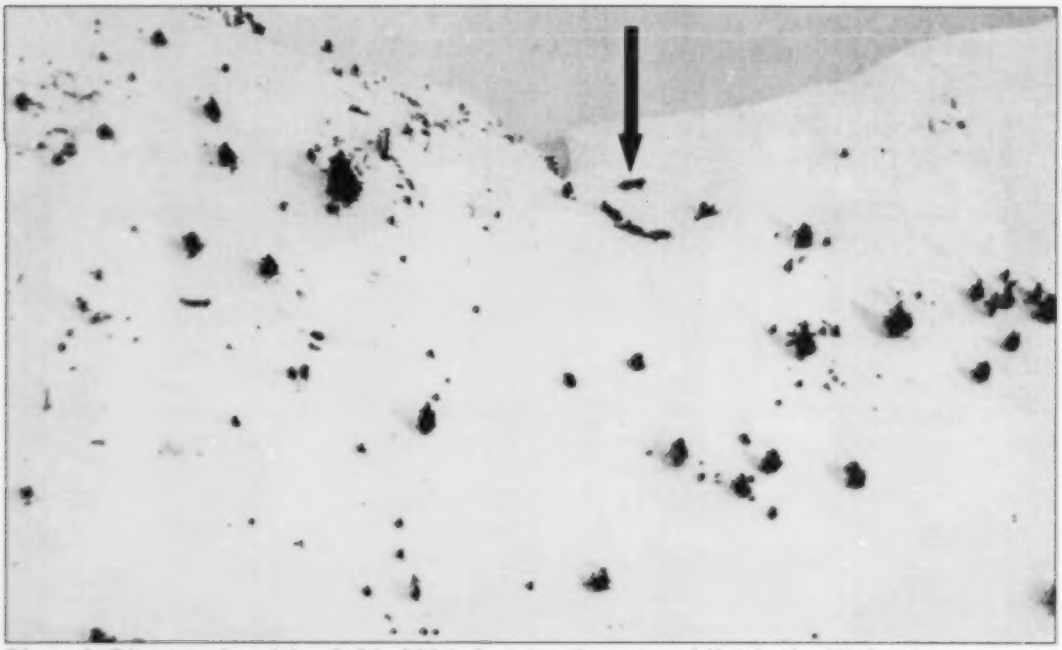

Photo 9: Picture taken March 21, 2004 showing 5 snowmobiles in the Welcome Mountain area in a voluntary closure zone.

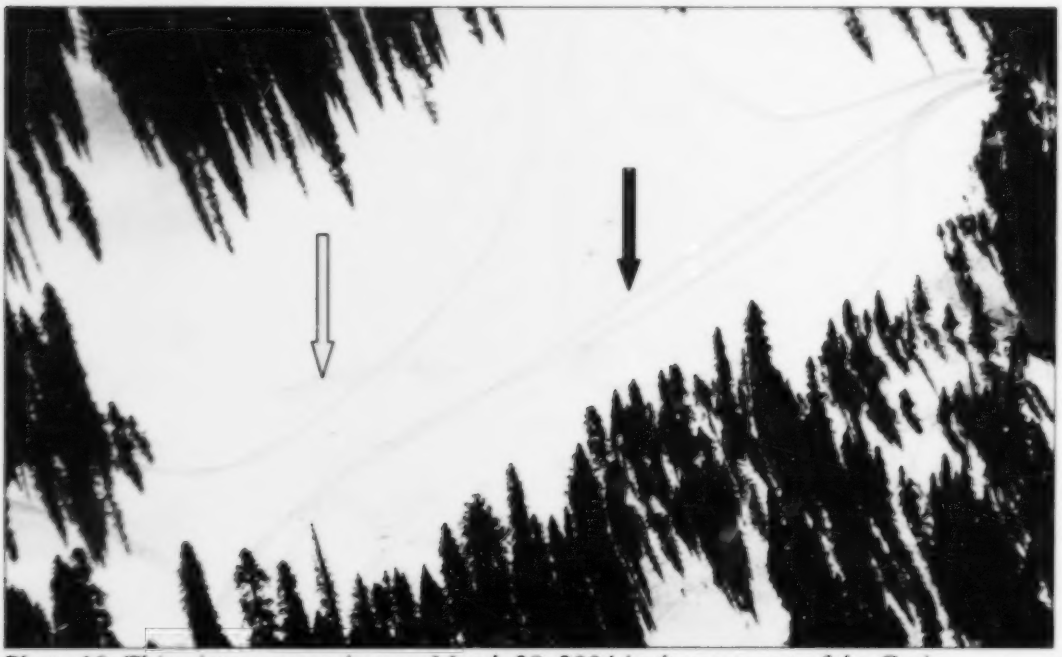

Photo 10: This picture was taken on March 28, 2004 in the area east of the Grain Creek trials between Grain Creek and Ishkloo Creek in a caution zone. Picture was taken on March 28, 2004. Red arrow indicates snowmobile tracks and the yellow arrow indicates caribou tracks.

Figure 2. Map showing the data points collected

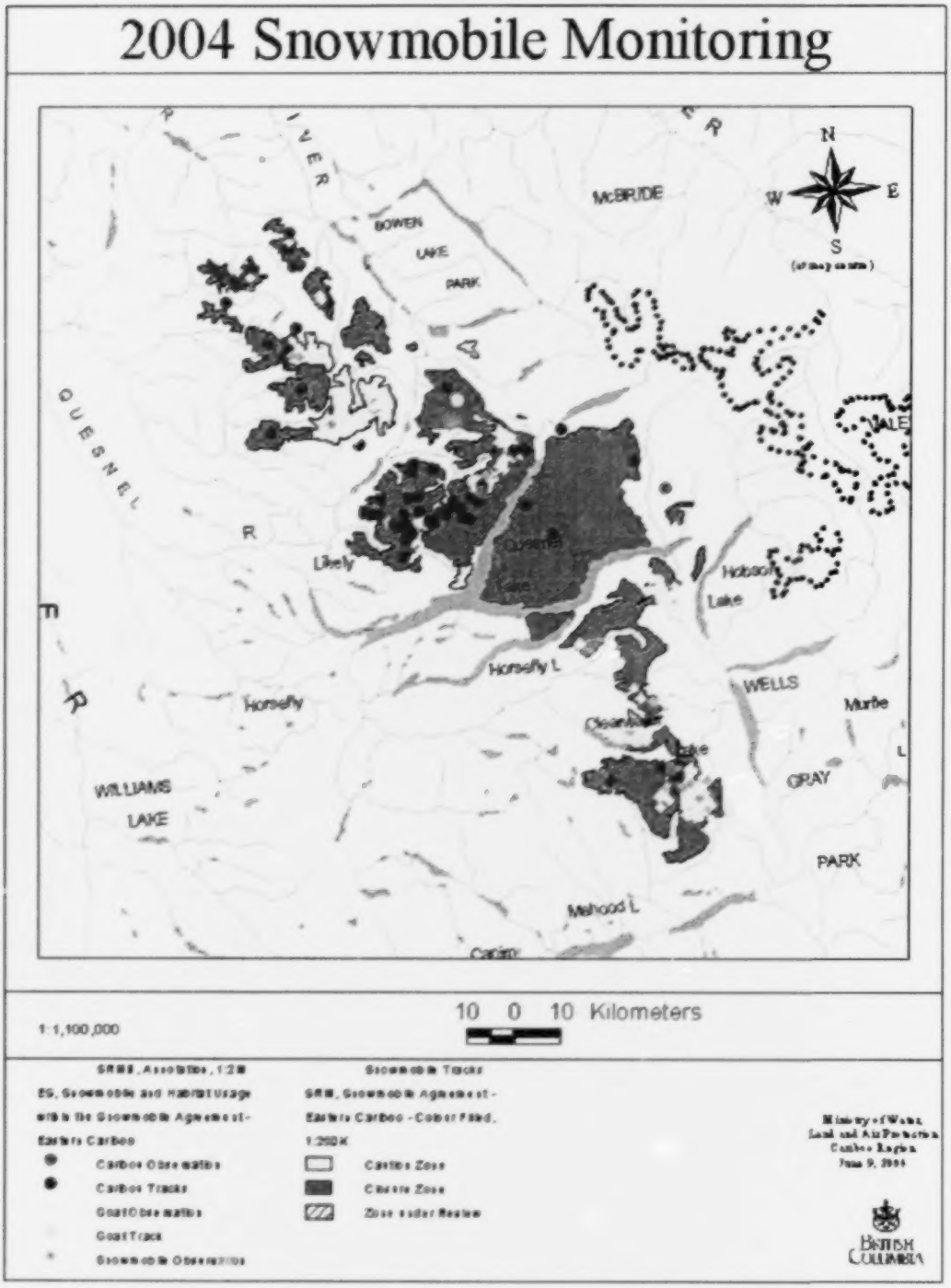

Figure 2: Map showing the data points collected

Project Costs

Aircraft rental for the project totalled 56.9 hours of flight time costing $16,309.76. The flight times included the ferry time to and from the project area.

Conclusions

In summary, the data collected indicated that snowmobile activity was more prevalent in the *voluntary closure zones* than in 2003, in particular in the Grain Creek area but for the most part the agreement was being adhered to with a compliance rate of 80%. Snowmobile use (tracks) was also noted in other *voluntary closure areas*. Since this is the second year of a two year agreement this may change with better communication within the snowmobile community.

Funding is currently in place to continue this project on a limited basis in 2005. The continued monitoring of snowmobile activity will indicate if the agreement and associated education is working.